

# METHOD AND APPARATUS FOR CONTROLLING OUTPUT VOLTAGES AND FREQUENCIES OF TURBINE/ALTERNATOR ON COMMON SHAFT

## ABSTRACT OF THE DISCLOSURE

An electrical system and method for a turbine/alternator comprising a gas driven turbine and a permanent magnet alternator rotating on a common shaft includes an inverter circuit connectable either to an output circuit or the stator winding of the alternator. A control circuit during a start-up mode switches the inverter circuit to the stator winding of the alternator and during a power out mode switches the inverter circuit to the output circuit and power line. During the power output mode the power line is monitored and the output voltage, frequency and/or phase is matched or synchronized to the power line.